ARIZONA'S

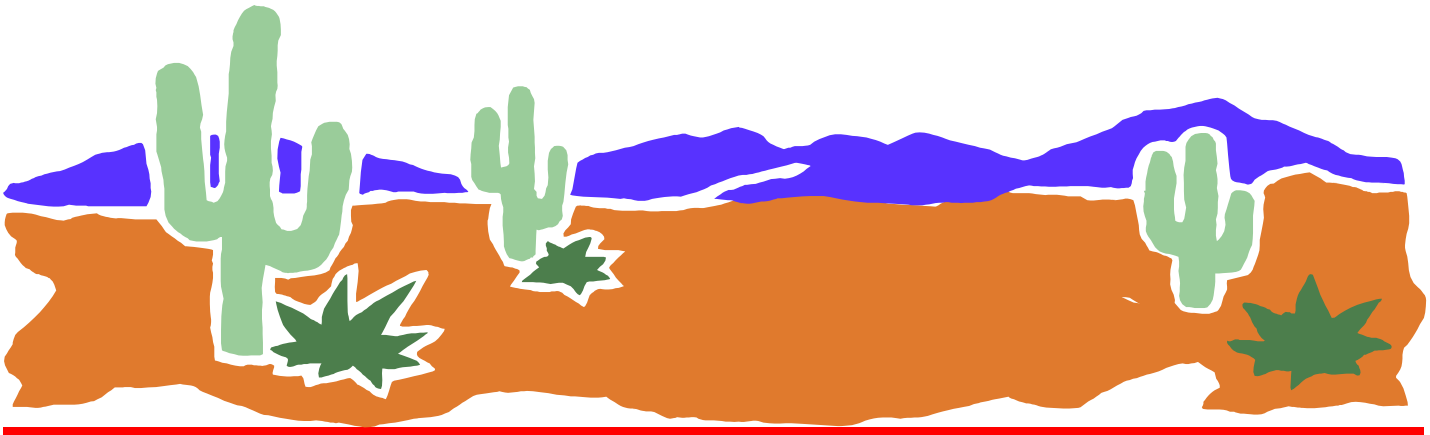
Instrument to Measure Standards

READING

Sample Test Items

AIMS
HIGH SCHOOL

FORM RA-ST-1



LANGUAGE ARTS

Preface

The article, "Careers in Cyberspace", and the related items first appeared in the *Student Guide to AIMS*. "The Weather in Arizona" and the items presented with it first appeared in Form A AIMS Reading administered in the spring of 1999. An attempt was made to present items as closely as possible to the format in which they appear on the actual test. These items were created by CTB/McGraw Hill and are used here with their permission.

The first section of this packet (the sample test items) can be duplicated for student use. The Appendix, which contains the Answer Key and a discussion of readability issues, is intended for teacher use.

By Mary Anne Shew

Directions: Read this article. Then answer Reading Questions 1 through 4.

While the information technology industry has never lacked jobs for qualified people, the recent explosion in the popularity of the Internet has created a demand that will last well into the next century. And the opportunities to join this field have never been better.

Let's Start With The Basics

Computer careers can be loosely organized around the three main components of any computer system: the hardware, the software, and the human who uses them. Hardware refers to the physical, tangible pieces of a computer such as the monitor, printer, central processing unit (CPU), and the circuitry that wires it all together. The reason that it's called "hardware" is because once it's been created, it's difficult (and often expensive) to change it physically. Software, on the other hand, is just another kind of human language (programming) and resides with the computer as electrical impulses. If you want the software to do something different from what it was doing, you just update the programming, which resets those impulses and activates the change. Therefore, software is very flexible, or "soft." Supporting the human who is using the computer hardware and software is one of the most significant challenges of our time.

In the early days, very few people had access to a computer, and it required much training and practice to be successful, including a degree in electrical engineering or another related discipline. The equipment and the software that went into those early computers were extremely expensive, and companies limited computer usage to those who were thoroughly trained. In comparison, today's computers are everywhere, and one need not understand programming to use one. But often, user manuals, online tutorials, and classroom training provide an understanding that can be time-consuming to reach on one's own. A huge industry in technical writing, training, and user interface development has sprung up to help people make the most of their computers. So, no matter whether your interest lies in working with things (like hardware), with people, or somewhere in between (like software), there is probably a corner of cyberspace that you can make your own.

Hardware

In the area of hardware, the jobs with the best future are those centered on design and development of new equipment and improvements to older models. Hardware design positions usually require a bachelor of science degree in electrical engineering or a similar background. A position that does not require a four-year degree is that of Technician, which includes hardware repair, installation, and upgrades such as replacing a hard disk of one size with a larger one. There are many other jobs associated with manufacturing computers, but most of the assembly lines are in non-U.S. locations.

Software

Software continues to be a major growth industry, and unlike hardware, quite often what you know is more important than how you got that knowledge. Credentials like a college degree or certification from a major software vendor are certainly welcome and add to your employability, but the field is changing so quickly that your own initiative is the only way to keep up with such software innovations as Java, Netscape, and the exciting things happening in multimedia.

Some Other Cyberspace Jobs

Data entry: This is a modern-day version of the *typing pool* in which you type in data, often from a form, into a computer for subsequent processing. The insurance and medical industries are heavily reliant on paperwork that must be entered into computers for billing and payment processing

Programmer: This person writes the instructions (software) that tell a computer exactly what to do. The most popular programming languages are C, C++, Unix, Java, and HTML (hypertext markup language).

System designer: This person determines how the networks, software, and databases must be set up to meet customer needs. If working with people is more along your line, there are many jobs that lean more heavily on people skills than technical skills. One such job is **Technical Support**. Many companies now have *help desks*, where people using computers can call to get questions answered and problems resolved. This kind of job requires some basic training, often provided by the company.

Computer sales representatives are those friendly people who answer your questions in computer stores and help you figure which computer is right for you.

Technical writers meet the challenge of translating *techno-babble* into terms that anyone can understand. Their work can result in everything from user manuals to Web pages to systems documentation.

With more experience, you have more career options. You might be interested in jobs that bridge the technical world of bits and bytes with the business world of finances and products.

Systems managers oversee groups that develop, install, and maintain software. The most senior manager in the information systems part of a company is the chief information officer. He or she is responsible for delivering cost-effective systems that support the business properly.

As with much of the future, it is impossible to predict anything with complete certainty. However, computers are here to stay, in forms not yet even dreamed of (except maybe in *Star Trek*). And there will always be a need for people to make it happen—in cyberspace.

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1 What is the main purpose of this article?

- **A** to discuss various kinds of computers
- **B** to explain the jobs of technical writers
- **C** to identify jobs in the computer industry
- **D** to show the different kinds of hardware and software

2 How would you define *cyberspace*?

- **A** It is the realm of computer communication.
- **B** It is the hardware that goes into making computers.
- **C** It is the part of the computer in which the software resides.
- **D** It is the software that resides within the computer as electrical impulses.

3 Given the information in this article, what is probably the future of computers?

- **A** They will become more sophisticated.
- **B** They will require fewer computer industry employees.
- **C** They will become obsolete.
- **D** They will require federal regulation for their future use.

4 The information in this article would most likely help readers to

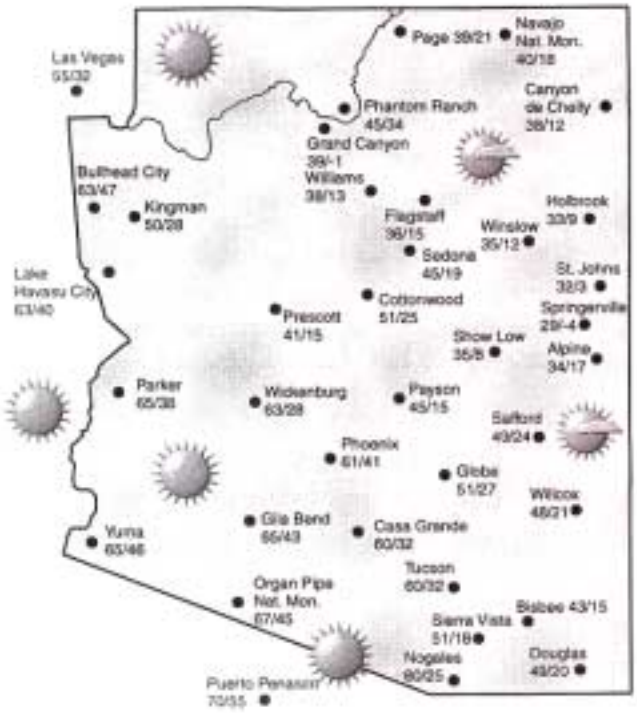
- **A** learn about specific job openings in the information technology field.
- **B** understand how computer hardware and software work together.
- **C** find out if they have the background for a career in computing.
- **D** identify different careers offered in the information technology field.

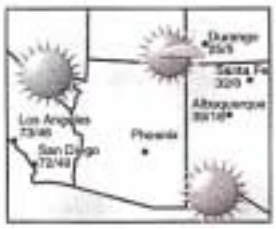
Directions: Look at the weather page. Then do Numbers 5 through 10.

THE WEATHER IN ARIZONA

TODAY'S FORECAST

Temperatures for Arizona are forecast highs and lows.





AIRPORT OUTLOOK

City	Delays	City	Delays
Atlanta	None	Las Vegas	None
Chicago	Likely	Los Angeles	None
Columbus	None	Minneapolis	Likely
Dallas	None	New York	None
Denver	None	San Francisco	None
Detroit	Possible	Seattle	Likely
Houston	None	St. Louis	Likely

SUN AND MOON

Sunset today:	5:29 p.m.
Sunrise Monday:	7:31 a.m.
Moon sets today:	5:00 p.m.
Moon rises Monday:	7:15 a.m.

New	First	Full	Last
Dec. 29	Jan. 5	Jan. 12	Jan. 20

STATE AT A GLANCE

Sunny and seasonable weather will be the rule today, with even warmer weather on the way next week. By midweek a few clouds will pass, but temperatures will remain pleasant.

	Sat.	TODAY	Mon.
Alpine	nr/-22	34/17	44/14
Bisbee	43/17	43/15	55/19
Buckeye	55/24	59/28	63/30
Bullhead City	59/40	63/47	68/51
Cnyn de Chy	nr/10	38/12	43/16
Carefree	54/28	58/32	62/34
Casa Grande	56/28	60/32	64/34
Coolidge	60/29	64/33	68/35
Cottonwood	nr/20	51/25	61/28
Douglas	49/22	49/20	61/24
Flagstaff	46/-8	36/15	46/18
Gila Bend	60/35	65/43	70/46
Globe	nr/22	51/27	61/30
Grnd Cnyn	44/-6	39/-1	49/2
Greer	36/0	32/5	42/8
Heber	nr/nr	29/8	35/12
Holbrook	31/7	33/9	38/13
Kingman	46/21	50/28	55/32
Lk Hvsu City	59/33	63/40	68/44
Nogales	56/27	60/25	68/29
Organ Pipe	62/37	67/45	72/48
Page	37/19	39/21	44/25
Payson	50/10	45/15	55/18
Phoenix	57/37	61/41	65/43
Pinetop	nr/nr	29/-1	39/-1
Prescott	46/10	41/15	51/18
Safford	49/26	49/24	61/28
Sedona	50/14	45/19	55/22
Show Low	39/3	35/8	45/11
Sierra Vista	nr/20	51/18	63/22
Springerville	33/-9	29/-4	39/-1
St. Johns	30/1	32/3	37/7
Tucson	55/34	60/32	67/36
Wickenburg	59/24	63/28	67/30
Willcox	48/23	48/21	60/25
Williams	43/8	38/13	48/16
Winslow	33/10	35/12	40/16
Youngtown	59/32	63/36	67/38
Yuma	60/38	65/46	70/49

UV INDEX: 2 (Minimal)

Minutes in the sun today to redden untanned and unprotected skin.

9 am: 60 Noon: 56 3 pm: 60

Source: Arizona Cancer Center, Tucson

LAWN WATERING

12" is needed for rye grass lawns if last watered 3 days ago.

For more information: the Phoenix Conservation Resource Division: 256-3433

5 According to this weather page, which place is the warmest on December 28?

A Grand Canyon

B Wickenburg

C Organ Pipe

D Phoenix

6 What is most likely the reason that the Phoenix Conservation Resource Division provides lawn watering information?

A to insure healthy grass

B to help park employees

C to improve fire protection

D to prevent overuse of water

7 What is the best generalization about low temperatures throughout Arizona on December 28?

A They vary greatly.

B They remain constant.

C They become warmer in the east.

D They are generally below freezing.

8 If you were flying to Chicago the day this weather page was printed, what information could you learn for your trip from this page?

A Monday's forecast is good.

B Rain is expected in Chicago.

C There is no information available.

D Chicago weather may slow air traffic

9 Ellen would like to plan a camping trip for January when the moon is full. Based on the information in the chart, she should plan her trip for the week of

A January 4-10.

B January 11-17.

C January 18-24.

D January 25-31.

10 If state law requires drivers to use their headlights one half hour before sunset, by what time would lights be required on the day of this report?

A 4:30 p.m.

B 4:59 p.m.

C 5:29 p.m.

D 7:01 p.m.

APPENDIX

Answer Key

Sample Item #	Key	Source Item #	Standard and Concept	Description of what item measures
1	**C**	Student Guide, #1	RP4-PO3	Evaluate information
2	**A**	Student Guide, #2	RP1-PO4	Make extensions based on evidence
3	**A**	Student Guide, #3	RP1-PO3	Make predictions based on evidence
4	**D**	Student Guide, #4	RP4-PO1	Critique consistency and clarity of purpose
5	**C**	Form A, #20	RP1-PO1	Extract details
6	**D**	Form A, #23	RP1-PO4	Extend ideas
7	**A**	Form A, #24	RP1-PO4	Extend ideas
8	**D**	Form A, #21	RP1-PO4	Extend ideas
9	**B**	Form A, #25	RP1-PO1	Extract details
10	**B**	Form A, #26	RP1-PO4	Extend ideas

** Note: Short answer items have been discontinued on all future forms of AIMS Reading. Reading will be measured with multiple choice items only.*

High School Reading Forms
Content Related Information

Table A presents the concepts, types of passages, and the approximate number of items per passage that are found on the High School Reading Test, Forms A, C, and D. These test forms are considered to be equivalent test forms and may be used interchangeably. Form A was administered in the spring of 1999. Form B is scheduled for administration in the fall of 2001. Form C was administered in the spring of 2000. Form D will be administered in the spring of 2001.

There are six to seven passages per form. An analysis of readability was conducted by Dr. Robert K. Hess from Arizona State University, employing a program known as *Readability Plus* (1988). The estimated readability levels (using a Flesch-Kincaid formula) for the passages across Forms A, C, and D range from grade 5 to grade 12. Readability is estimated in terms of elements such as sentence length and syllables per word. Readability, which provides some information regarding passage difficulty, is not considered to be a measure of comprehensibility.

Table A

Concepts, Passages, and Items Per Passage for Forms A, C, and D

Concepts		Passages Types	Items per Passage
RP-1	Reading Strategies	Fiction, nonfiction	4-7
RP-2	Literary elements in fiction/nonfiction/poetry	Fiction, nonfiction, poetry	4-7
RP-3	Evaluate persuasive techniques	Editorials, book reviews, essays, critiques	4-7
RP-4	Evaluate technical journals	Technical manuals, workplace documents	4-7
RP-5	Analyze contemporary literature	Fiction, poetry	4-7

Table B presents specific information about test Form A, administered in the spring of 1999. Shown are the types of passages, the approximate length of each passage, the number of questions per passage, and an estimated readability level. The estimated readability levels, as was previously stated, give some information regarding the difficulty of the passage but are not considered to be a measure of comprehensibility.

Table B

Reading passage type, approximate length, number of questions per passage, and estimated readability.

Reading Passage	Approximate length	Number of Questions	Estimated Readability level
1. non-fiction (magazine article)	9 paragraphs 643 words	4	10.1
2. technical manual	Chart 365 words	4	12.3
3. book review	10 paragraphs 736 words	11	11.1
4. weather map (newspaper)	Chart 118 words	7	5.6
5. fiction	10 paragraphs 301 words	7	5.7
6. poem	3 stanzas 87 words	7	7.3
Total: 6 passages	Average length: 1-2 pp	Total: 40 items	Range: 5.6-12.3

AIMS High School Reading Passages
Readability and Comprehensibility

The readability of the AIMS high school reading passages is one factor that may influence comprehensibility of the passages. Readability refers to the surface structure of a passage. Surface structure relates to such factors as sentence length, syllables per word, use of passive sentences, and percent of common words versus uncommon words. The degree of comprehensibility of a passage is affected by several factors in addition to the level of readability, such as vocabulary difficulty, sentence structure complexity, meaningfulness, depth of content, style of the writer, genre and purpose of the passage, and the background the student brings to the reading process.

AIMS Reading measures reading comprehension. The AIMS reading passages were selected based on specific content criteria, and test items are used that were determined to be appropriate for measuring comprehension in terms of the Arizona Reading Standards.

The readability of the high school reading passages (as a factor that may affect comprehension) can be determined by analyzing the passages with a readability formula such as the Flesch-Kincaid, which is available in popular word processing programs. There are also special programs that are dedicated to analyzing text and providing detailed information on readability factors. Almost all readability programs employ estimations of difficulty by measuring either sentence complexity and/or word complexity. Since all that the formulas are capable of providing is a measure of surface level difficulty and not cognitive difficulty, all readability formulas must be viewed with some caution. Readability estimates will vary somewhat depending upon the readability formula used. A readability analysis of the AIMS high school reading passages estimates readability levels from approximately fifth grade through approximately twelfth grade for the various passages on test forms A, C, and D.

The percent of words in the AIMS reading passages that were among the eighty percent of the words found to be most common (as are found on basic word lists of 1000 to 3000 words) were mostly in the range of seventy to eighty-five percent. The uncommon or more difficult words ranged from around fifteen to thirty percent. This high percentage of common words contributes to making the passages readable for the student so that the student can focus on meaning and comprehension.

The Arizona Department of Education would like to acknowledge the work of Dr. Robert K. Hess at Arizona State University West in the preparation of this readability report.